

# Data Sheet

**iRobot®**  
Ava® 500



## Remote Presence for the Enterprise

### Product Overview

iRobot® Ava® 500 Video Collaboration Robot builds on the value of telepresence by extending the “power of in-person” beyond fixed environments – enabling the user freedom of movement and the ability to establish a physical presence from a remote location. Bringing together iRobot’s autonomous mobile robotics platform with Cisco enterprise-class telepresence solutions, Ava 500 enables users to instantly connect with anyone from anywhere around the world.

With rising travel costs and more globally distributed organizations, fixed telepresence solutions - such as room-based systems, executive and personal desktop units, and soft clients for PCs, smartphone and tablets - offer options for enterprises of all sizes. Video collaboration robots complement these existing solutions by offering mobile capabilities for end users that allow for meetings to take place in areas where videoconferencing solutions are unavailable or not practical and allow for conversations to continue outside of offices and conference rooms – into other locations.

A complete hardware and software solution, Ava 500 provides fully autonomous, on-demand remote presence from anywhere in the world to anywhere in an organization with enterprise-class security, reliability, and scalability for today’s globally distributed enterprise.

### Benefits of Video Collaboration Robots

Video collaboration robots enable increased collaboration between executives, managers, and employees when traditional fixed videoconferencing solutions are either unavailable or not practical. Robots help teams work more closely together without the need for costly and time-consuming travel. Communication is increased and knowledge transfer between groups and individuals is made easier through more flexible scheduling of meetings. Timely decision-making is enhanced, as interested and relevant parties can be part of more discussions at the moment that it’s needed. The result is increased productivity for managers and employees alike and a more nimble, productive enterprise.

## Applications

iRobot Ava 500 is ideal when freedom of movement and physical presence are needed to achieve an even more personal degree of collaboration within a dispersed workforce. Example applications include:

- Remote team collaboration: allows those working off-site to more personally participate within highly collaborative teams
- Executive management: provides managers of satellite teams the opportunity to be more personally present and able to move throughout an office or other indoor environments
- Manufacturing, lab and supply chain environments: delivers situational awareness and telepresence to areas including manufacturing facilities, labs and supply chain facilities
- Customer experience centers: extends access to remote participants around the world and increases effectiveness by enabling virtual presence of executives and specialists
- Remote corporate training and presentations: enables a more personal and interactive approach to remote corporate training and presentations



Executive Management and Collaboration



Manufacturing



Customer Experience Center



Remote Corporate Training



## Key Capabilities

### Navigation and Mobility

Ava 500 features autonomous navigation capabilities that allow remote users to simply specify a destination and the robot will automatically navigate its way to the desired location. There is no need for the remote user to understand the topology of the location where the robot resides or manually drive the robot to its destination. Through advanced mapping technologies, Ava 500 learns the environment in which it operates to create a realistic topology map of each location. Built-in obstacle detection and obstacle avoidance capabilities (ODOA) that leverage laser, 3D imaging and sonar technologies ensure that if the topology of the environment changes or there are moving objects in its path, such as people, the robot will not bump into them. Manual operations to rotate the robot, move the robot telepresence system up-and-down, and tilt the camera are also provided for more refined control of the robot. Robot speed may be controlled based on site conditions.

### Enterprise-Class Standards-Based Videoconferencing

Ava 500 leverages HD video and audio videoconferencing via a built-in Cisco TelePresence™ EX60 for video calls of up to 1080p30 resolution. Standards-based H.323/SIP videoconferencing calls up to 6Mbps point-to-point ensure that users will benefit from an optimal videoconference experience. Embedded enterprise-grade security such as encryption, secure HTTPS management, and password protection ensures that Ava 500 is a trusted part of your corporate videoconferencing infrastructure.

### Easy-to-Use Client Application

The remote user schedules and controls the robot via iRobot's client application running in an iPad tablet. This easy-to-use application provides ease and simplicity for non-technical users by abstracting the actual robot from the user. A remote user simply schedules a meeting and places a request for a robot and the application assigns and provisions a robot from the available pool. At the scheduled time of the meeting, the remote user simply initiates the videoconference session and the robot travels automatically to the destination in time for the meeting. When the meeting has concluded, the remote user ends the session and the robot returns to its docking station automatically to recharge for the next user.

When needed, manual operation of the robot is done through trackpad interfaces on the iPad which control movement of the robot. With these trackpads, the robot can be manually moved forward, backward, or side-to-side. Further control allows the camera to be moved up-and-down and the video screen to be moved from a standing to a seated position.

### Scheduling and Management

Management of Ava 500 is done through the iRobot Ava 500 Cloud Service. The iRobot Ava 500 Cloud Service manages the resource pool of robots, tracks and manages robot scheduling, monitors robot health including charging condition, and provides error reporting capabilities. The iRobot Ava 500 Cloud Service provides robust resource allocation functionality, which allows users to simply select where, when, and how long they need a robot rather than spending time reserving a particular robot that may not be available at the time it is needed.

### Features

### Benefits

iPad application for remote user control and scheduling	.....	Easy-to-use familiar interface doesn't require learning
Virtual travel allows user to select location and point of interest and the Ava 500 takes them there	.....	No need to select or call a specific robot or system; user is simply transported automatically to the desired destination
Mapping and pre-programmed destinations: each robot builds and maintains a precise map of the location where it resides, and is programmed to be aware of destinations of interest to users	.....	Remote user doesn't have to know details about the environment (employee workstations, conference rooms, offices, waypoints on a production floor, labs, etc.) or where the robot is
Autonomous navigation: Ava 500 navigates to selected destination (offices, conference rooms, shared spaces, labs, etc.) without requiring user guidance	.....	No need for manual driving of the robot; Allows for safe maneuvering to avoid bumping into people and other objects
Auto docking: when the session is complete, the robot automatically returns to its docking station for charging	.....	The user doesn't need to spend time driving the robot back to its dock to recharge
Enterprise HD video and audio videoconferencing (up to 1080p30) via Cisco TelePresence EX60	.....	Ensures optimal experience for local participants and remote users
Enterprise-grade security and interoperability via SIP and H.323	.....	Protects customer's investment in video collaboration by working in any standards-based videoconferencing environment
Robust scheduling enables user to reserve a session at any desired destination at any time in the future; integrates with user's personal calendar	.....	Eliminates frustration and wasted time by ensuring robot will be available for key meetings at the desired location and time
Automated height and camera adjustment via iPad application	.....	Allows robot to be positioned at optimal height and angle for remote users to interact with colleagues standing in hallways, labs or facility tours, or with those seated at a table in offices or conference rooms
Integrated wireless via embedded Cisco Aironet 1600 wireless access point	.....	Enables seamless, enterprise-grade network connectivity and security
Long battery life up to six hours between charging	.....	Enables robot to be used throughout the day without the need to recharge
iRobot Ava 500 Cloud Service	.....	No need to install and maintain on-premises software; no need for patching, maintenance, and support
Enterprise-grade industrial design	.....	Ensures that the robot commands a compelling presence

### Specifications

Compatibility	Fully compatible with standards-compliant telepresence and video systems
Components	<ul style="list-style-type: none"> <li>- iRobot Ava 500 robot and charging station</li> <li>- iRobot Ava 500 iPad application from Apple App Store</li> <li>- iRobot Ava 500 Cloud Service</li> <li>- Cisco TelePresence EX60 system</li> </ul>
Cisco EX60 Display	<ul style="list-style-type: none"> <li>- 21.5" LCD</li> <li>- Resolution: 1920x1080 (16:9)</li> <li>- Contrast ratio: 1000:1</li> <li>- Viewing angle: 170 degrees</li> <li>- Response time: 5 ms</li> </ul>
User interface	Local: Volume up/down and microphone mute Remote: via iRobot iPad application
Cisco EX60 Camera	<ul style="list-style-type: none"> <li>- Cisco TelePresence PrecisionHD design</li> <li>- Resolutions: 1080p30 and 720p60</li> <li>- Auto-focus</li> <li>- Multicoated all-glass optics</li> <li>- 1/3-in., 2.1 megapixel CMOS sensor</li> <li>- Horizontal field of view 50 degrees</li> <li>- Focus distance: 0.1-infinity</li> </ul>
Audio	Two stereo front speakers Integrated full-range microphone
Network and protocols	Wi-Fi 802.11a/g/n Video collaboration via SIP or H.323
Sensors	LIDAR, 3x 3D imagers, 3x Sonars, bumper switches
Mobility	<ul style="list-style-type: none"> <li>- Holonomic drive</li> <li>- Max speed: 1 m/s</li> <li>- Autonomous mobility</li> <li>- Object Detection, Obstacle Avoidance</li> </ul>
Language support	Local interfaces in English iPad application in English, French, German, and Spanish
Battery life	Approximately six hours of continuous operation
Weight and dimensions	<ul style="list-style-type: none"> <li>- Approximately 186 lbs, 84.4 kg</li> <li>- Width and length: 22 5/8", 57.5 cm</li> <li>- Approximate height: max 65.5", 166.4 cm</li> </ul>
Charging station	<ul style="list-style-type: none"> <li>- Fully automatic robot docking</li> <li>- Wall mounted</li> <li>- Autosensing power supply</li> <li>- 100-240 VAC, 50/60 Hz</li> </ul>
iRobot Ava 500 Cloud Service	<ul style="list-style-type: none"> <li>- Cloud-based service</li> <li>- Private, customer-specific application provisioning</li> <li>- ITU x.509 certificate-based, encrypted robot communications</li> <li>- Integrated robot time, navigation and configuration management</li> <li>- End-user controllable robot session scheduling</li> </ul>

## Ava 500 Network Architecture

